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Submission date: 11-Aug-2018 08:37 PM (UTC+0500)

Submission ID: 989162453

File name: f_Accounting_and_Risk_Management_in_Supply_Chain_Management.docx (49.6K)

Word count: 3743

Character count: 21029

The Role of Accounting and Risk Management in Supply Chain Management: A lesson learnt from the Indonesian Meat Industry

Abstract----Now a day, supply chain management (SCM) has been continuously imperative. Supply chain management performs is developed up. A significant number of studies were centered around supply chain management in the scholarly community. The motivation behind this investigation of study is to inspect the part of risk management on upgrading the execution of supply chain management, to look at the capacity of accounting management on expanding the execution of supply chain management, to reinforce the moderating part of information technology between risk management and supply chain management and to fortify the moderating part of information technology between accounting management and supply chain management. To accomplish these destinations, the present investigation utilized quantitative approach. Study strategy used to gather the information. Information were gathered from workers of

Indonesian association of meat provider. Three hundred (300) samples were appropriated among the respondents. After analyzing the information through Smart PLS 3, it was discovered that meat providers and meat providers have been moving and centering towards decreasing cost, upgrading productivity and viability of supply chain management framework. In addition, it was explored that for decreasing cost and improving execution accounting management programming is fundamental. Further, information technology is the beneficial choice to decrease risk and enhancing the effectiveness of supply chain management in Indonesian association.

Keywords: *Supply chain management, accounting management, risk management, information technology*

1. Introduction

The food supply chain is one of supply chain area which endures a great deal of vulnerability in its working [1]. Structure of the supply chain moderately extraordinary between one nation to different nations [2], for example, in the United Kingdom [3], Japan [4], and Australia [5]. Other than that, kinds of food items additionally have uniqueness in view of sorts of food items, for example, agri-food [6] and meat items [7]. In the stream of food items in the supply chain, there is a risk that food tainted with perilous materials for human wellbeing, and food cannot be devoured. A risk is characterized as buyer view of vulnerabilities and occasions to be gotten because of obtaining a decent or administration [8]. Fundamentally, there are two primary segments of risk, in particular: (1) risk classification of item, which is the impression of a man who must be acknowledged in view of purchasing a specific item and (2) risk to item detail (item

particular risk), which is the impression of the relationship to the risk that will be acknowledged on an item [9]. Other risk high cost seen by the client is check a considerable measure to the provider [10]. This would make intense risk for the provider [10]. In such manner, Accounting with regards to supply chains has been found to assume empowering parts in the management of cost diminishment exercises [11] and in the foundation of confiding in relationship [12]. Notwithstanding, there have been scrutinized for a constrained accentuation on dyadic relationship (e.g. purchaser and provider) along these lines overlooking the impact of others (e.g. investors, specialist organizations and so on.) in the working of accounting inside this specific circumstance [13]. Thusly, in the supply chain, organizations ought to have the capacity to recognize the exercises that are the wellspring of risk with the goal that food is dangerous to eat. A few wellsprings of the risks if not oversaw legitimately will cause risks that negatively affect food items, for example, tainted [14].

Along these lines, it is important to recognize exercises at risk in the supply chain of meat. This condition demonstrates that fresh meat should be figured out how to evade the risk of mischief to wellbeing and its endurable cost for the client. A few primer investigations on new meat supply chains are related with enhanced meat quality with traceability [15] and its value maintainability [16]. With the learning of different sorts of the risk occasion, it is relied upon to be a decent meat management, so the negative effect of the risk can be maintained a strategic distance from and view of surprising expense by the client could be alleviated through accounting management and control [17]. Along these lines, the objectives of current examination are to research the elements of enhancing the execution of supply chain management and decreasing risk and this

principle objective is divided into three sections.

1. To investigate the role of risk management on enhancing the performance of supply chain management
2. To examine the function of accounting management on increasing the performance of supply chain management
3. To strengthen the moderating role of information technology between risk management and supply chain management
4. To strengthen the moderating role of information technology between accounting management and supply chain management

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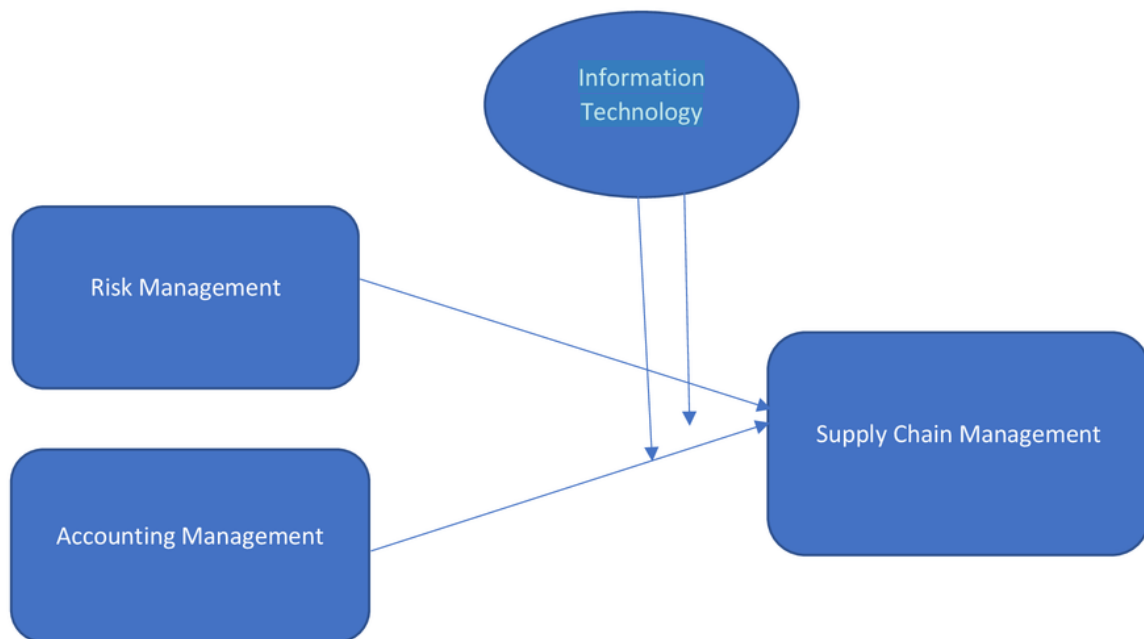


Fig. 1. Theoretical Framework

2. Review of the Literature and Hypothesis Development

Risk management and accounting management have been discussed by exerting direct significant effect on supply chain management. Further, information technology (IT) exerts a moderating effect between the relation of risk management and supply chain management and accounting management and supply chain management.

2.1 Risk Management

Supply chain risk management can be characterized in two different ways. One path is to characterize it as "teaming up with accomplices in a supply chain and apply risk management process instruments to manage risks and vulnerabilities caused by, or affecting on, coordination's related exercises or assets" [18]. It is additionally characterized in basic terms as "the recognizable proof and management of risks for the supply chain, through a planned approach among supply chain individuals, to lessen supply chain helplessness overall" [19]. In these definitions, supply chain risk management must recognize supply chain risk sources, risk results, risk drivers and risk moderating systems.

The exploration of [20] brings up the significance of risk appraisal before setting up relieving risk procedures. Before outlining moderating procedures, chiefs need to comprehend the idea of the supply chain system and supply base technique for their organizations. At that point they accentuate the significance of supply chain joint effort, which supports information trade in supply chain systems and supply chain spryness, which incorporates supply chain perceivability, a reasonable perspective of

the up-and downstream stream of the supply chain and supply chain speed, and the connection of end-to-end separation to time in the supply chain. They likewise bring up the significance of developing a hierarchical culture where individuals end up mindful of supply chain risk and supply chain risk management with the goal that all laborers in the association perceive supply chain risk in their exercises [20].

The exploration of [20] display four focuses for moderating techniques. In the first place, evasion is related with items' geographic markets and provider and market associations. An organization can drop items, providers and topographical markets because of inconsistent supply. Second, organizations control possibilities from different risk sources. It incorporates vertical mix, expanding stock and keeping up extreme limit underway, taking care of, capacity and transportations. Third, participation includes joint understanding, which can lessen vulnerability underway. This incorporates joint understanding between supply chain individuals to share information and get ready joint designs. Fourth, adaptability builds supply chain responsiveness to unforeseen occasions. Illustrations are deferment and numerous sourcing [20].

With regards to the supply chain of food items, the conceivable risks are the tainting of the food from the substance, natural and physical parts of the food security pointer or the risk that happens because of the conduct that causes the food not to be expended. This condition is driven by a few factors that impact, among others, absence of institutional help (government strategy) as far as law authorization on food security, absence of information and familiarity with ranchers, as a source in the supply chain procedure of microbiology in general [21]

and less ideal usage of food wellbeing during the time spent making food [22] brought about development rate, change of value and increment of item intensity of food industry item encountering hindrances [23]. The defilement of perilous substances in the supply chain is likewise influenced by the negative controls executed by the performing artists in the supply chain bringing about uneasiness and burden to buyers, requiring information that guarantees that the items expended to meet the quality principles and halal prerequisites [24]. Along these lines, in the supply chain, organizations ought to have the capacity to distinguish the exercises that are the wellspring of risk with the goal that food is hazardous to eat. A few wellsprings of the risks if not oversaw appropriately will cause risks that negatively affect food items, for example, debased [14]. A fresh meat is one of the food wellsprings of animals are fundamental as a wellspring of useful protein

and development, particularly in offspring of an early age where at that age the rate of development and advancement of cerebrum cells is high [25]. Nonetheless, meat is likewise food that is at high risk of being defiled if not overseen legitimately. In Indonesia, a few episodes due to have meat harming happened in Purbalingga bringing about 93 individuals in healing center [4], and 70 individuals harmed in Nunukan District [4]. In this way, it is important to distinguish exercises at risk in the supply chain of meat. This condition shows that fresh meat should be figured out how to keep away from the risk of damage to wellbeing. A few fundamental investigations on new meat supply chains are related with enhanced meat quality with traceability [15]. With the learning of different sorts of the risk occasion, it is relied upon to be a decent meat management, so the negative effect of the risk can be maintained a strategic distance from.



(Kirezleva et al., 2015) Model

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H1: there is a significant relationship between risk management and supply chain management

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2.2 Supply Chain Management and Management Accounting

[26] stated about the changing part of cost bookkeepers and frameworks because of changing purchaser and provider connections and infers that quite a bit of this inquiry stays unanswered. Although the part of management accounting in between authoritative connections has gotten expanding consideration over the most recent couple of years, this part is still a long way from being unmistakably decided. It is contended that supply chain management (SCM) has a few ramifications for management accounting, which are identified with subjects, for example, esteem chain investigation, cost control, and execution estimation [27]. The accounting writing gives a couple of headings in which a few ramifications of between hierarchical connection ships for management accounting can be found. One such bearing is some exact and hypothetical work regarding the matter directed inside Japanese management accounting, which alludes uniquely to between hierarchical cost frameworks [28]. However, there are also various factors which effect on supply chain/logistic activities, these factors include; staff services quality, transit time, payment system, traceability of goods, audit activities, distribution channels, information communication technology, customer satisfaction etc. [29] [30] [31] [32] [33]. Another heading in the accounting writing which reasonably has had some significant consideration is the idea of significant worth chain investigation, as a feature of vital cost management [34]. Exact proof on esteem chain examination is still rare [35]. It can be reasoned that the writing offers minimal experimental confirmation on the part of management accounting in such connections, and that hypothesis advancement is still at a beginning time.

H2: there is a noteworthy connection between accounting management and supply chain management

2.3 Information Technology (IT)

The utilization of information technology (IT) in commerce with the process of supply chain has involved expanding consideration the commercial world. To be sure, an ongoing report directed by Forrester study of the Research demonstrates that United States makers are increasingly reliant on advantages understood by IT to: improve supply chain readiness, lessen duration in process, achieve higher productivity, and take items to customers in a favorable method [36]. In any case, information technology interest in the process of supply chain does not safeguard a more grounded ranked implementation. The discussion on the "IT-efficiency" mystery and other narrative confirmation recommends that the effect of IT on firm execution stays vague [37] [38]. According to [39], the appropriation of a IT is efficiently original by dissimilar firms and it frequently does not stretch a reinforced higher hand to the in receipt of companies [39]. As anyone might expect, deciding how IT as an asset can make a supported upper hand for a firm stays to be an uncertain issue [40].

IT-empowered supply chain capacities can fill in as an impetus in changing IT related assets into higher incentive for a firm. Its estimation can be improved when it is inserted all through the supply chain process [39]. The execution of IT in the supply chain may authorize a company to make and collective making learn stores regarding its customers, wage-earners along with market requests, which thusly influences company implementation [41].

Information technology (IT) upgraded the effectiveness of supply chain management by enhancing the risk management [42]. Risk could be overseen by

applying its part [43]. Further, IT assumes a significant part in accounting management [44]. IT has given different programming to perform accounting management framework [44].

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H3: Information technology (IT) moderates the association between risk management and supply chain management

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H3: Information technology (IT) moderates the association between accounting management and supply chain management

3. Methodology

The research method has been the most vital part of the study. The high-quality of appropriate method for the analysis must be accordance with the kind of problematic. The current research is based on quantitative study method. However, accordance with the nature of the research, cross sectional design has been designated. A survey has been conducted to gather the data from an employee of Indonesia. The 5-point Likert scale has been used to assemble the data. Questionnaires has been dispersed by using simple random sampling method. Though, the sample size has been designated based on [45] series for inferential statistics.

Accordance with this series, “sample with less than 50 members will perceive to become a weaker; a sample of 100 sizes would be weak; 200 will be satisfactory; a sample of 300 would be measured as good; 500 very good whereas 1000 would be outstanding.” Thus, three hundred sample sizes have been chosen in this study. Firstly, questionnaire has been filled to gain direct access to the respondents who are dealing supply management system. The response rate has been given in below Table 1. Moreover, SmartPLS 3 (SEM) has been used to examine the composed data.

Table 1 Response Rate

Response	Frequency/Rate
Number of questionnaires distributed	300
Number of questionnaires returned	170
Number of Useable questionnaires	162
Number of excluded questionnaires	08
Response rate before data entry	56.6 %
Response rate after data entry	54%

4. Data Analysis and Results

Smart partial least square has been used to analyze the data

4.1 Structural Model Assessment

SmartPLS 3 has been employed to measure the model. Factor internal consistency in this process, Cronbach's alpha, average variance extracted, and composite reliability were observed. Fig. 9 shows assessment of the measurement model. The results of measurement model assessment are given in Table 2. The results show that all the items had a factor loading more than 0.70.

However, only two items had the factor loading value below 0.70. Factor loading should be more than 0.50 and all those items must be erased with factor loading having value less than 0.50 [46]. Factor loading is more than 0.50 Internal consistency has been attained as which confirms the convergent validity. AVE and composite reliability have been also more than satisfactory range 0.70 and 0.50, corresponding [46]. Furthermore, to make the discriminant validity utilized to confirm the external consistency, Discriminant validity results have been shown in Table 3.

Table 2 Cronbach's alpha, Factor Loading, AVE and Composite reliability

Construct	Indicators	Loading	Cronbach's alpha	Composite Reliability	AVE
Risk Management	RM1	0.67	0.76	0.75	0.53
	RM2	0.71	0.78	0.81	0.57
	RM3	0.70	0.79	0.79	0.51
	RM4	0.69	0.81	0.76	0.59
	RM5	0.68	0.75	0.78	0.52
Accounting Management	AM1	0.61	0.71	0.76	0.56
	AM2	0.79	0.78	0.78	0.53
	AM3	0.76	0.74	0.74	0.51
	AM4	0.73	0.77	0.77	0.56
	AM5	0.72	0.76	0.71	0.50
Information Technology	IT1	0.71	0.78	0.71	0.51
	IT2	0.74	0.79	0.79	0.58
	IT3	0.69	0.73	0.73	0.52
	IT4	0.77	0.71	0.71	0.56

Supply Chain Management	SCM1	0.81	0.76	0.77	0.53
	SCM2	0.79	0.76	0.76	0.54
	SCM3	0.75	0.71	0.73	0.56
	SCM4	0.74	0.78	0.78	0.59
	SCM5	0.82	0.74	0.71	0.51
	SCM6	0.78	0.76	0.77	0.53
	SCM7	0.83	0.77	0.71	0.57

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Table 3 Discriminant Validity

	1	2	3	4
Risk Management	0.911			
Accounting Management	0.894	0.899		
Information Technology (IT)	0.791	0.861	0.923	
Supply Chain Management	0.873	0.851	0.901	8.56

Note: Risk Management, Accounting Management, Information Technology, Supply Chain Management

4.2 Structural Model Assessment

Table 3 displays the measurement model assessment for the direct effects. It has been originated that all the direct relations have t-value more than 1.96 at 0.05 at the level of significance. So, all the relations have been important. Furthermore, β -value displays a

positive association. Therefore, all the direct hypotheses (H-1, H2,) have been acknowledged as revealed in Table 3. Furthermore, Table 3 displays the effect size (f^2). By the subsequent the endorsements of [47], it has been originated that Risk Management (RM) and Accounting Management (AM) had strong effect

Table 4. Direct Effect

Hypothesis	Relationship	(β)	SD	T-Values	P-Values	Decision
H1	RM->SCM	0.108	0.016	6.75	0.000	Supported
H2	AM->SCM	0.309	0.034	9.289	0.000	

Table shows the direct effect of risk management and supply chain management (SCM), accounting management and supply chain management (SCM). The results of the

direct effect show that for both hypothesis, the t-value is above 1.96 and p-value is below 0.05 which accept both H1 and H2 hypothesis. Results are shown in Table 4.

Table 5. Effect of Moderation

Hypothesis	Relationship	(β)	SD	T-Values	P-Values	Decision
H3	RM*IT ->SCM	0.199	0.041	4.853	0.000	Supported
H4	AM*IT ->SCM	0.222	0.112	1.983	0.000	Supported

Moreover, the moderation effect is shown in Table 5. The moderation results indicate that information technology (IT) has significant role in the relationship of risk management and supply chain management (SCM) and the

relationship of accounting management and supply chain management (SCM). As the t-value for moderation effect is above 1.96.

5. Discussions

The literature discloses that there have been many variables manipulating Supply Chain Management (SCM). However, the most conclusive variables are Risk Management (RM) and Accounting Management. The t-value has been greater than the threshold value of 1.96 with significance value at 0.05 is satisfactory. The path between Risk

Management and Supply Chain Management ($\beta=0.108$, $t\text{-value}=6.75$, $p<0.05$), shows a positive noteworthy association. So, the present study found a important positive association between Risk Management and Supply Chain Management, supportive H1. It proves that rise in one variable would also rise in another variable towards the similar direction.

In respect of Accounting Management and Supply Chain Management ($\beta=0.140$, $t\text{-value}=4.49$, $p<0.05$), values display a positive noteworthy association between two variables, additional β representative that 14% influence of Accounting Management. Thus, there is a significant positive association between Accounting Management and Supply Chain Management, therefore by providing provision for H2. Thus, it is revealed that rise in one variable would also rise in another variable with the similar way.

Similarly, the moderating effect of IT on the association between risk Management and Supply Chain Management ($\beta=0.199$, $t\text{-value}=4.853$, $p<0.05$), the values show a positive noteworthy association between two

variables, additional β representative that 19% influence of Accounting Management. Thus, there is a significant moderating effect on the association between risk Management and Supply Chain Management, therefore by providing provision for H3.

Similarly, the moderating effect of IT on the association between accounting management and Supply Chain Management ($\beta=0.222$, $t\text{-value}=1.983$, $p<0.05$), the values show a positive noteworthy association between two variables, additional β representative that 22% influence of Accounting Management. Thus, there is a significant moderating effect on the association between accounting management and Supply Chain Management, therefore by providing provision for H4.

6. Conclusion

Fresh meat is a food wellspring of the protein imperative for human wellbeing. New meat supply chain is the way toward giving crude materials to customers. Any action executed by the guilty party represents a risk that negatively affects human wellbeing. In by and large, found a few risk occasions that will be a wellspring of risk in the supply chain of fresh meat in Indonesia. To decrease the effect of risks to human wellbeing, it is important to execute a coordinated food security framework among performing artists in the fresh meat supply chain. For instance, to keep up the nature of fresh meat in conveyance, it is important to utilize the sort of vehicle as per food wellbeing norms, as far as temperature and bundling. Promote utilization of information technology is the best answer for keep the stockroom of solidified meat protected and sound. So also, Inter-firm connections represent an expanding offer of firms' costs and are related with introduction to new risks (and returns). Even though they are frequently started to lessen cost; they are progressively a

wellspring of vital preferred standpoint for firms pressing together both minimal effort and separation procedures. Legitimate utilization of accounting management can help to diminish the cost of meat by upgrading the execution of significant worth chain. This will likewise build the adjusted motivating force all things considered. In any case, accounting management would be suitable utilization of in such manner on the off chance that IT programming could help to keep the record, break down and execute.

The investigation was restricted to the risk identification process in fresh meat. This investigation demonstrated the risk exercises performed on 13 procedure of new meat supply chain. For future research, it is important to think about the parts of food wellbeing, and halal in the supply chain. So also, the connections among stock framework will be examined later with supply chain management.

7. Managerial Implication

Supply chain management is the backbone of the organization. Manager needs to make the strategy to reduce cost, fresh product safety and availability of inventory of a product. So, in this regard, if he uses appropriate ways with the assist of information technology to mitigate the risk then product will be

hygienic and uncontaminated. Similarly, for record keeping, data analyzing and budgeting, he uses software of information technology then it would be profitable method to minimize the cost and to make effective use of supply chain management.

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